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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,395	02/13/2004	Kenny Cheng	80034/11049	9005

29471 7590 06/28/2005

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EXAMINER

ELVE, MARIA ALEXANDRA

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/779,395

Applicant(s)

CHENG ET AL.

Examiner

M. Alexandra Elve

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/14/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-10, 12-20 & 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grossklaus, Jr. et al. (USPAP 2004/0086635 A1) in view of Gray et al. (USPN 6,387,541).

Grossklaus, Jr. et al. discloses a method of repairing a turbine part (vane, blade, airfoil and so forth) using laser cladding. Hot combustion gases corrode turbine parts. Damaged material is removed, leaving an exposed base metal surface. Base metal restoration is applied by furnishing a structural material, which has the same composition as the base metal, in the form of a powder or wire. These are overlaid on the exposed base metal and then laser clad. Base metal restoration is typically in process machined and final machining to meet desired dimensions, shape and surface finish. Additionally, following the final machining the repaired part may be subjected to a rub coating in the form of a low temperature thermal spray (heat treatment process). (abstract, figures, 0002-0005, 0008-0009, 0011, 0024-0026, 0028-0030, 0037-0038)

Grossklaus, Jr. et al. teaches corrosion from hot combustion gases, but not specifically sulphidation.

Art Unit: 1725

Gray et al. discloses a turbine blade, aerofoil, platform and root, which must be protected from oxidation and sulphidation. The protective austenitic stainless steel coating and chromium oxide layer provides protection against high temperature turbine environments, i.e. material loss or degradation due to oxidation and/or corrosion i.e. sulphate attack. (abstract, figures, col. 3, lines 63-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to note that sulphidation, as taught by Gray et al. is essentially the same degradation process as corrosion in Grossklaus, Jr. et al. because they are both degradation processes which render the part in a damaged state.

Claims 2, 11 & 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grossklaus, Jr. et al. and Gray et al., as stated in the above paragraph and further in view of Goodwater et al. (USPN 6,173,491).

Grossklaus, Jr. et al. and Gray et al. teach the removal of damaged material prior to laser cladding repair, but do not specifically teach the type of removal.

Goodwater et al. teaches the refurbishment of a turbine engine part (vanes, airfoils, platforms and so forth). Platforms are machined, using known machining processes (e.g. contour milling, automated belt sanding, manual belt sanding). Vacuum heat treatments are also performed during the machining, in order to restore the original microstructure. Following this the parts are laser clad. Final machining and coating is

Art Unit: 1725

performed in order to restore the dimensions, surface finish and other critical features.

(abstract, figures, col. 5-6)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use abrasive machining, as taught by Goodwater et al. in the Grossklaus, Jr. et al. and Gray et al. process because these are merely specific methods for removing damaged material.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See US PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 27, 2005.



M. Alexandra Elve
Primary Examiner 1725